

**Notice of Allowability**

Application No.

10/795,808

Examiner

Michael A. Lyons

Applicant(s)

DE GROOT ET AL.

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to original filing of 08 March 2004.
2. ☒ The allowed claim(s) is/are 1-70 and 72.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of the:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.  
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached  
1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.  
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.  
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |   |
|---|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)           |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date <u>4204, 9104, 12105</u> | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                   |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material  | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|   | 9. <input type="checkbox"/> Other _____   |

## **DETAILED ACTION**

### **EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Marc Wefers on March 28, 2006.

The application has been amended as follows:

Claims 35, 68, and 69 are amended below as follows to correct grammatical errors.

35. A method comprising:

comparing information derivable from a scanning interferometry signal for a first surface location of a test object to information corresponding to multiple models of the test object, wherein the multiple models are parameterized by a series of characteristics for the test object, wherein the series of characteristics comprises a series of characteristics of the test object at a second surface location different from the first surface location.

68. Apparatus comprising:

a computer readable medium having a program that causes a processor in a computer to compare information derivable from a scanning interferometry signal for a first surface location of a test object to information corresponding to multiple models of the test object, wherein the multiple models are parameterized by a series of characteristics for the test object,

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wherein the series of characteristics comprises a series of characteristics of the test object at a second surface location different from the first surface location.

69. Apparatus comprising:

a scanning interferometry system configured to produce a scanning interferometry signal;  
and

an electronic processor coupled to the scanning interferometry system to receive the scanning interferometry signal and programmed to compare information derivable from a scanning interferometry signal for a first surface location of a test object to information corresponding to multiple models of the test object, wherein the multiple models are parameterized by a series of characteristics for the test object,

wherein the series of characteristics comprises a series of characteristics of the test object at a second surface location different from the first surface location.

Claim 70 is amended as follows.

70. A method comprising:

chemically mechanically polishing a test object;  
collecting scanning interferometry data for a surface topography of a test object; and  
adjusting process conditions for the chemically mechanically polishing of the test object based on information derived from the scanning interferometry data,

wherein adjusting the process conditions based on the information derived from the scanning interferometry data comprises comparing information derivable from the scanning interferometry signal for at least a first surface location of a test object to information

corresponding to multiple models of the test object, wherein the multiple models are parameterized by a series of characteristics for the test object.

Claim 71 is cancelled.

*Allowable Subject Matter*

**Claims 1-70 and 72 are allowed in view of the prior art.**

The following is an examiner's statement of reasons for allowance:

As for claims 1, 33, and 34, the prior art of record, taken either alone or in combination, fails to disclose or render obvious a method and apparatus comprising the comparison of information derivable from a scanning interferometry signal for a first surface location of a test object to information corresponding to multiple models of the test object, the models parameterized by a series of characteristics for the test object, where the information being compared relates to a shape of the scanning interferometry signal for the first surface location of the test object, with the apparatus of claim 33 being a computer readable medium that causes a processor in a computer to execute the above method, in combination with the rest of the limitations of the above claims. With further regard to claim 34, while the prior art of record, such as US Pat. 5,589,938 to Deck discloses a scanning interferometry system and a processor coupled to the interferometer, the functionality, which is the above method, of the programmed processor of the instant claims causes the claim to read over the prior art.

As for claims 35, 68, and 69, the prior art of record, taken either alone or in combination, fails to disclose or render obvious a method and apparatus comprising the comparison of information derivable from a scanning interferometry signal for a first surface location of a test object to information corresponding to multiple models of the test object, the models

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parameterized by a series of characteristics for the test object, where the series of characteristics are a series of characteristics of the test object at a second location that is different from the first location actually being measured, with the apparatus of claim 68 being a computer readable medium that causes a processor in a computer to execute the above method, in combination with the rest of the limitations of the above claims. With further regard to claim 69, while the prior art of record, such as US Pat. 5,589,938 to Deck discloses a scanning interferometry system and a processor coupled to the interferometer, the functionality, which is the above method, of the programmed processor of the instant claims causes the claim to read over the prior art.

As for claim 70, the prior art of record, taken either alone or in combination, fails to disclose or render obvious a method comprising the collection of scanning interferometry data for the surface topography of a test object under going chemical mechanical polishing and adjusting the conditions for the polishing based on the collected data, wherein the adjusting of the conditions based on the derived information from the interferometry data comprises comparing information derivable from a scanning interferometry signal for a first surface location of a test object to information corresponding to multiple models of the test object, the models parameterized by a series of characteristics for the test object, in combination with the rest of the limitations of the above claim.

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6,417,109 to Jordan et al.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

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fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Lyons whose telephone number is 571-272-2420.

The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley can be reached on 571-272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MAL  
March 28, 2006



**HWA (ANDREW) LEE  
PRIMARY EXAMINER**